



# SEQUENCE LISTING

<110> Armour, Christopher  
Castle, John  
Garrett-Englele, Philip  
Johnson, Jason

<120> ALTERNATIVELY SPLICED ISOFORMS OF HUMAN PHKA2

<130> RS0204Y

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<141> 2003-08-26

<150> US 60/408,058

<151> 2002-09-03

<150> US 60/431,474

<151> 2002-12-05

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Met Arg Ser Arg Ser Asn Ser Gly Val Arg Leu Asp Gly Tyr Ala Arg
1           5           10          15

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Leu Val Gln Gln Thr Ile Leu Cys Tyr Gln Asn Pro Val Thr Gly Leu
          20           25           30

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```

Leu Ser Ala Ser His Glu Gln Lys Asp Ala Trp Val Arg Asp Asn Ile
          35           40           45

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Val Asn Leu Val Asn Val Thr Lys Asn Glu Ile Ile Ser Lys Leu Gln  
275 280 285

Gly Arg Tyr Gly Cys Cys Arg Phe Leu Arg Asp Gly Tyr Lys Thr Pro  
290 295 300

Arg Glu Asp Pro Asn Arg Leu His Tyr Asp Pro Ala Glu Leu Lys Leu  
305 310 315 320

Phe Glu Asn Ile Glu Cys Glu Trp Pro Val Phe Trp Thr Tyr Phe Ile  
325 330 335

Ile Asp Gly Val Phe Ser Gly Asp Ala Val Gln Val Gln Glu Tyr Arg  
340 345 350

Glu Ala Leu Glu Gly Ile Leu Ile Arg Gly Lys Asn Gly Ile Arg Leu  
355 360 365

Val Pro Glu Leu Tyr Ala Val Pro Pro Asn Lys Val Asp Glu Glu Tyr  
370 375 380

Lys Asn Pro His Thr Val Asp Arg Val Pro Met Gly Lys Val Pro His  
385 390 395 400

Leu Trp Gly Gln Ser Leu Tyr Ile Leu Ser Ser Leu Leu Ala Glu Gly  
405 410 415

Phe Leu Ala Ala Gly Glu Ile Asp Pro Leu Asn Arg Arg Phe Ser Thr  
420 425 430

Ser Val Lys Pro Asp Val Val Val Gln Val Thr Val Leu Ala Glu Asn  
435 440 445

Asn His Ile Lys Asp Leu Leu Arg Lys His Gly Val Asn Val Gln Ser  
450 455 460

Ile Ala Asp Ile His Pro Ile Gln Val Gln Pro Gly Arg Ile Leu Ser  
465 470 475 480

His Ile Tyr Ala Lys Leu Gly Arg Asn Lys Asn Met Asn Leu Ser Gly  
485 490 495

Arg Pro Tyr Arg His Ile Gly Val Leu Gly Thr Ser Lys Leu Tyr Val  
500 505 510

Ile Arg Asn Gln Ile Phe Thr Phe Thr Pro Gln Phe Thr Asp Gln His  
515 520 525

His Phe Tyr Leu Ala Leu Asp Asn Glu Met Ile Val Glu Met Leu Arg  
530 535 540

Ile Glu Leu Ala Tyr Leu Cys Thr Cys Trp Arg Met Thr Gly Arg Pro  
545 550 555 560

Thr Leu Thr Phe Pro Ile Ser Arg Thr Met Leu Ser Asn Ser Arg Asp  
565 570 575

Phe Ser Arg Leu Pro Pro Ala Pro Gly Val Val Trp Ala Leu Thr Asn  
580 585 590

Val

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<211> 2073  
<212> DNA  
<213> Homo sapiens

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acaattagaa aactagagga tggatatttt ggaggagcca gagtaaaatt aggggaacctt 180  
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gagaagttgt ttgacaatgc cagcgaaggg actttcagtc ctgatagtga ttcagatttg 300  
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ccgagtgggg cttatgggac gatgacctac ctaacaagag cagtggcttc ttatttgcag 2040
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<210> 8
<211> 691
<212> PRT
<213> Homo sapiens

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<400> 8

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Met Val Leu Met Lys Met Phe Gln Cys Ile Thr Glu Lys Lys Ser Ala
1           5           10           15

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Gln Thr Lys Leu Ile His His Phe Phe Ser Leu Ala Asn Asp Gly Ser  
 20 25 30

Asp Ile His Ser Ala Val Leu Ser Thr Ile Arg Lys Leu Glu Asp Gly  
 35 40 45

Tyr Phe Gly Gly Ala Arg Val Lys Leu Gly Asn Leu Ser Glu Phe Leu  
 50 55 60

Thr Thr Ser Phe Tyr Thr Tyr Leu Thr Phe Leu Asp Pro Asp Cys Asp  
 65 70 75 80

Glu Lys Leu Phe Asp Asn Ala Ser Glu Gly Thr Phe Ser Pro Asp Ser  
 85 90 95

Asp Ser Asp Leu Val Gly Tyr Leu Glu Asp Thr Cys Asn Gln Glu Ser  
 100 105 110

Gln Asp Glu Leu Asp His Tyr Ile Asn His Leu Leu Gln Ser Thr Ser  
 115 120 125

Leu Arg Ser Tyr Leu Pro Pro Leu Cys Lys Asn Thr Glu Asp Arg His  
 130 135 140

Val Phe Ser Ala Ile His Ser Thr Arg Asp Ile Leu Ser Val Met Ala  
 145 150 155 160

Lys Ala Lys Gly Leu Glu Val Pro Phe Val Pro Met Thr Leu Pro Thr  
 165 170 175

Lys Val Leu Ser Ala His Arg Lys Ser Leu Asn Leu Val Asp Ser Pro  
 180 185 190

Gln Pro Leu Leu Glu Lys Val Pro Glu Ser Asp Phe Gln Trp Pro Arg  
 195 200 205

Asp Asp His Gly Asp Val Asp Cys Glu Lys Leu Val Glu Gln Leu Lys  
 210 215 220

Asp Cys Ser Asn Leu Gln Asp Gln Ala Asp Ile Leu Tyr Ile Leu Tyr  
 225 230 235 240

Val Ile Lys Gly Pro Ser Trp Asp Thr Asn Leu Ser Gly Gln His Gly  
245 250 255

Val Thr Val Gln Asn Leu Leu Gly Glu Leu Tyr Gly Lys Ala Gly Leu  
260 265 270

Asn Gln Glu Trp Gly Leu Ile Arg Tyr Ile Ser Gly Leu Leu Arg Lys  
275 280 285

Lys Val Glu Val Leu Ala Glu Ala Cys Thr Asp Leu Leu Ser His Gln  
290 295 300

Lys Gln Leu Thr Val Gly Leu Pro Pro Glu Pro Arg Glu Lys Ile Ile  
305 310 315 320

Ser Ala Pro Leu Pro Pro Glu Glu Leu Thr Lys Leu Ile Tyr Glu Ala  
325 330 335

Ser Gly Gln Asp Ile Ser Ile Ala Val Leu Thr Gln Glu Ile Val Val  
340 345 350

Tyr Leu Ala Met Tyr Val Arg Ala Gln Pro Ser Leu Phe Val Glu Met  
355 360 365

Leu Arg Leu Arg Ile Gly Leu Ile Ile Gln Val Met Ala Thr Glu Leu  
370 375 380

Ala Arg Ser Leu Asn Cys Ser Gly Glu Glu Ala Ser Glu Ser Leu Met  
385 390 395 400

Asn Leu Ser Pro Phe Asp Met Lys Asn Leu Leu His His Ile Leu Ser  
405 410 415

Gly Lys Glu Phe Gly Val Glu Arg Ser Val Arg Pro Ile His Ser Ser  
420 425 430

Thr Ser Ser Pro Thr Ile Ser Ile His Glu Val Gly His Thr Gly Val  
435 440 445

Thr Lys Thr Glu Arg Ser Gly Ile Asn Arg Leu Arg Ser Glu Met Lys  
450 455 460

Gln Met Thr Arg Arg Phe Ser Ala Asp Glu Gln Phe Phe Ser Val Gly  
 465 470 475 480

Gln Ala Ala Ser Ser Ser Ala His Ser Ser Lys Ser Ala Arg Ser Ser  
 485 490 495

Thr Pro Ser Ser Pro Thr Gly Thr Ser Ser Ser Asp Ser Gly Gly His  
 500 505 510

His Ile Gly Trp Gly Glu Arg Gln Gly Gln Trp Leu Arg Arg Arg Arg  
 515 520 525

Leu Asp Gly Ala Ile Asn Arg Val Pro Val Gly Phe Tyr Gln Arg Val  
 530 535 540

Trp Lys Ile Leu Gln Lys Cys His Gly Leu Ser Ile Asp Gly Tyr Val  
 545 550 555 560

Leu Pro Ser Ser Thr Thr Arg Glu Met Thr Pro His Glu Ile Lys Phe  
 565 570 575

Ala Val His Val Glu Ser Val Leu Asn Arg Val Pro Gln Pro Glu Tyr  
 580 585 590

Arg Gln Leu Leu Val Glu Ala Ile Met Val Leu Thr Leu Leu Ser Asp  
 595 600 605

Thr Glu Met Thr Ser Ile Gly Gly Ile Ile His Val Asp Gln Ile Val  
 610 615 620

Gln Met Ala Ser Gln Leu Phe Leu Gln Asp Gln Val Ser Ile Gly Ala  
 625 630 635 640

Met Asp Thr Leu Glu Lys Asp Gln Ala Thr Gly Ile Cys His Phe Phe  
 645 650 655

Tyr Asp Ser Ala Pro Ser Gly Ala Tyr Gly Thr Met Thr Tyr Leu Thr  
 660 665 670

Arg Ala Val Ala Ser Tyr Leu Gln Glu Leu Leu Pro Asn Ser Gly Cys  
 675 680 685

Gln Met Gln  
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<211> 3606  
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| tttggaggag  | ccagagtaaa  | attagggaac | ctttcggaat | ttctcaccac | atcgttctac  | 1740 |
| acatatctga  | cttttctgga  | tccagactgt | gatgagaagt | tgtttgacaa | tgccagcgaa  | 1800 |
| gggactttca  | gtcctgatag  | tgattcagat | ttggtaggat | atctggaaga | cacctgtaat  | 1860 |
| caagaaagcc  | aagacgaact  | tgaccattat | atcaaccacc | ttctgcaaag | cacatcgttg  | 1920 |
| aggtcctatc  | tgccctctct  | ttgtaagaac | acagaagacc | gccatgtctt | cagtgtctatc | 1980 |
| cactccacgc  | gggacatact  | ttctgtgatg | gcaaaagcaa | agggtttgga | agttccatth  | 2040 |
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| ggcctgccgc  | ccgagccccg  | ggagaagatc | atctctgcgc | cccttcccc  | agaggagctc  | 2520 |
| acaaaactca  | tctacgaggg  | cagtgggcag | gacatcagca | ttgccgtcct | cacgcaggag  | 2580 |
| attgtgggtt  | acctggccat  | gtatgtcagg | gcgagcccca | gcctctttgt | ggagatgctg  | 2640 |
| agactccgga  | ttggactgat  | cattcagggt | atggccacgg | agctggcacg | gagcctgaac  | 2700 |
| tgctcaggag  | aagaggcttc  | tgaaagtttg | atgaacctca | gccctttcga | tatgaaaaat  | 2760 |
| ctcctgcacc  | atattctaag  | tgggaaagag | tttggcggtg | aaagaagtgt | gcgcctatc   | 2820 |
| cactcctcca  | catccagccc  | taccatctcc | atccacgagg | tgggccatac | cggagtcacc  | 2880 |
| aaaactgaga  | ggagtggcat  | taacagactg | aggagtga   | tgaaacagat | gactaggcgg  | 2940 |
| tttagtgctg  | atgaacagtt  | cttttctgtg | ggccaggccg | cgtccagcag | tgcgcattcc  | 3000 |
| tccaagtctg  | cgagggtccg  | caccccatcc | tcgcccactg | gcacgtcatc | ctcagactcg  | 3060 |
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<210> 10  
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<212> PRT  
<213> Homo sapiens  
<400> 10

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Leu Ser Ala Ser His Glu Gln Lys Asp Ala Trp Val Arg Asp Asn Ile  
35 40 45

Tyr Ser Ile Leu Ala Val Trp Gly Leu Gly Met Ala Tyr Arg Lys Asn  
50 55 60

Ala Asp Arg Asp Glu Asp Lys Ala Lys Ala Tyr Glu Leu Glu Gln Asn  
65 70 75 80

Val Val Lys Leu Met Arg Gly Leu Leu Gln Cys Met Met Arg Gln Val  
85 90 95

Ala Lys Val Glu Lys Phe Lys His Thr Gln Ser Thr Lys Asp Ser Leu  
100 105 110

His Ala Lys Tyr Asn Thr Ala Thr Cys Gly Thr Val Val Gly Asp Asp  
115 120 125

Gln Trp Gly His Leu Gln Val Asp Ala Thr Ser Leu Phe Leu Leu Phe  
 130 135 140

Leu Ala Gln Met Thr Ala Ser Gly Leu Arg Ile Ile Phe Thr Leu Asp  
 145 150 155 160

Glu Val Ala Phe Ile Gln Asn Leu Val Phe Tyr Ile Glu Ala Ala Tyr  
 165 170 175

Lys Val Ala Asp Tyr Gly Met Trp Glu Arg Gly Asp Lys Thr Asn Gln  
 180 185 190

Gly Ile Pro Glu Leu Asn Ala Ser Ser Val Gly Met Ala Lys Ser Ile  
 195 200 205

Leu Phe Ser Met Leu Pro Arg Ala Ser Thr Ser Lys Glu Ile Asp Ala  
 210 215 220

Gly Leu Leu Ser Ile Ile Ser Phe Pro Ala Phe Ala Val Glu Asp Val  
 225 230 235 240

Asn Leu Val Asn Val Thr Lys Asn Glu Ile Ile Ser Lys Leu Gln Gly  
 245 250 255

Arg Tyr Gly Cys Cys Arg Phe Leu Arg Asp Gly Tyr Lys Thr Pro Arg  
 260 265 270

Glu Asp Pro Asn Arg Leu His Tyr Asp Pro Ala Glu Leu Lys Leu Phe  
 275 280 285

Glu Asn Ile Glu Cys Glu Trp Pro Val Phe Trp Thr Tyr Phe Ile Ile  
 290 295 300

Asp Gly Val Phe Ser Gly Asp Ala Val Gln Val Gln Glu Tyr Arg Glu  
 305 310 315 320

Ala Leu Glu Gly Ile Leu Ile Arg Gly Lys Asn Gly Ile Arg Leu Val  
 325 330 335

Pro Glu Leu Tyr Ala Val Pro Pro Asn Lys Val Asp Glu Glu Tyr Lys  
 340 345 350

Asn Pro His Thr Val Asp Arg Val Pro Met Gly Lys Val Pro His Leu  
 355 360 365

Trp Gly Gln Ser Leu Tyr Ile Leu Ser Ser Leu Leu Ala Glu Gly Phe  
 370 375 380

Leu Ala Ala Gly Glu Ile Asp Pro Leu Asn Arg Arg Phe Ser Thr Ser  
 385 390 395 400

Val Lys Pro Asp Val Val Val Gln Val Thr Val Leu Ala Glu Asn Asn  
 405 410 415

His Ile Lys Asp Leu Leu Arg Lys His Gly Val Asn Val Gln Ser Ile  
 420 425 430

Ala Asp Ile His Pro Ile Gln Val Gln Pro Gly Arg Ile Leu Ser His  
 435 440 445

Ile Tyr Ala Lys Leu Gly Arg Asn Lys Asn Met Asn Leu Ser Gly Arg  
 450 455 460

Pro Tyr Arg His Ile Gly Val Leu Gly Thr Ser Lys Leu Tyr Val Ile  
 465 470 475 480

Arg Asn Gln Ile Phe Thr Phe Thr Pro Gln Phe Thr Asp Gln His His  
 485 490 495

Phe Tyr Leu Ala Leu Asp Asn Glu Met Ile Val Glu Met Leu Arg Ile  
 500 505 510

Glu Leu Ala Tyr Leu Cys Thr Cys Trp Arg Met Thr Gly Arg Pro Thr  
 515 520 525

Leu Thr Phe Pro Ile Ser Arg Thr Met Leu Thr Asn Asp Gly Ser Asp  
 530 535 540

Ile His Ser Ala Val Leu Ser Thr Ile Arg Lys Leu Glu Asp Gly Tyr  
 545 550 555 560

Phe Gly Gly Ala Arg Val Lys Leu Gly Asn Leu Ser Glu Phe Leu Thr  
 565 570 575



Thr Ser Phe Tyr Thr Tyr Leu Thr Phe Leu Asp Pro Asp Cys Asp Glu  
 580 585 590

Lys Leu Phe Asp Asn Ala Ser Glu Gly Thr Phe Ser Pro Asp Ser Asp  
 595 600 605

Ser Asp Leu Val Gly Tyr Leu Glu Asp Thr Cys Asn Gln Glu Ser Gln  
 610 615 620

Asp Glu Leu Asp His Tyr Ile Asn His Leu Leu Gln Ser Thr Ser Leu  
 625 630 635 640

Arg Ser Tyr Leu Pro Pro Leu Cys Lys Asn Thr Glu Asp Arg His Val  
 645 650 655

Phe Ser Ala Ile His Ser Thr Arg Asp Ile Leu Ser Val Met Ala Lys  
 660 665 670

Ala Lys Gly Leu Glu Val Pro Phe Val Pro Met Thr Leu Pro Thr Lys  
 675 680 685

Val Leu Ser Ala His Arg Lys Ser Leu Asn Leu Val Asp Ser Pro Gln  
 690 695 700

Pro Leu Leu Glu Lys Val Pro Glu Ser Asp Phe Gln Trp Pro Arg Asp  
 705 710 715 720

Asp His Gly Asp Val Asp Cys Glu Lys Leu Val Glu Gln Leu Lys Asp  
 725 730 735

Cys Ser Asn Leu Gln Asp Gln Ala Asp Ile Leu Tyr Ile Leu Tyr Val  
 740 745 750

Ile Lys Gly Pro Ser Trp Asp Thr Asn Leu Ser Gly Gln His Gly Val  
 755 760 765

Thr Val Gln Asn Leu Leu Gly Glu Leu Tyr Gly Lys Ala Gly Leu Asn  
 770 775 780

Gln Glu Trp Gly Leu Ile Arg Tyr Ile Ser Gly Leu Leu Arg Lys Lys  
 785 790 795 800

Val Glu Val Leu Ala Glu Ala Cys Thr Asp Leu Leu Ser His Gln Lys  
805 810 815

Gln Leu Thr Val Gly Leu Pro Pro Glu Pro Arg Glu Lys Ile Ile Ser  
820 825 830

Ala Pro Leu Pro Pro Glu Glu Leu Thr Lys Leu Ile Tyr Glu Ala Ser  
835 840 845

Gly Gln Asp Ile Ser Ile Ala Val Leu Thr Gln Glu Ile Val Val Tyr  
850 855 860

Leu Ala Met Tyr Val Arg Ala Gln Pro Ser Leu Phe Val Glu Met Leu  
865 870 875 880

Arg Leu Arg Ile Gly Leu Ile Ile Gln Val Met Ala Thr Glu Leu Ala  
885 890 895

Arg Ser Leu Asn Cys Ser Gly Glu Glu Ala Ser Glu Ser Leu Met Asn  
900 905 910

Leu Ser Pro Phe Asp Met Lys Asn Leu Leu His His Ile Leu Ser Gly  
915 920 925

Lys Glu Phe Gly Val Glu Arg Ser Val Arg Pro Ile His Ser Ser Thr  
930 935 940

Ser Ser Pro Thr Ile Ser Ile His Glu Val Gly His Thr Gly Val Thr  
945 950 955 960

Lys Thr Glu Arg Ser Gly Ile Asn Arg Leu Arg Ser Glu Met Lys Gln  
965 970 975

Met Thr Arg Arg Phe Ser Ala Asp Glu Gln Phe Phe Ser Val Gly Gln  
980 985 990

Ala Ala Ser Ser Ser Ala His Ser Ser Lys Ser Ala Arg Ser Ser Thr  
995 1000 1005

Pro Ser Ser Pro Thr Gly Thr Ser Ser Ser Asp Ser Gly Gly His  
1010 1015 1020

His Ile Gly Trp Gly Glu Arg Gln Gly Gln Trp Leu Arg Arg Arg  
 1025 1030 1035

Arg Leu Asp Gly Ala Ile Asn Arg Val Pro Val Gly Phe Tyr Gln  
 1040 1045 1050

Arg Val Trp Lys Ile Leu Gln Lys Cys His Gly Leu Ser Ile Asp  
 1055 1060 1065

Gly Tyr Val Leu Pro Ser Ser Thr Thr Arg Glu Met Thr Pro His  
 1070 1075 1080

Glu Ile Lys Phe Ala Val His Val Glu Ser Val Leu Asn Arg Val  
 1085 1090 1095

Pro Gln Pro Glu Tyr Arg Gln Leu Leu Val Glu Ala Ile Met Val  
 1100 1105 1110

Leu Thr Leu Leu Ser Asp Thr Glu Met Thr Ser Ile Gly Gly Ile  
 1115 1120 1125

Ile His Val Asp Gln Ile Val Gln Met Ala Ser Gln Leu Phe Leu  
 1130 1135 1140

Gln Asp Gln Val Ser Ile Gly Ala Met Asp Thr Leu Glu Lys Asp  
 1145 1150 1155

Gln Ala Thr Gly Ile Cys His Phe Phe Tyr Asp Ser Ala Pro Ser  
 1160 1165 1170

Gly Ala Tyr Gly Thr Met Thr Tyr Leu Thr Arg Ala Val Ala Ser  
 1175 1180 1185

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